

**CHUKA**



**UNIVERSITY**

## **UNIVERSITY EXAMINATIONS**

### **FOURTH YEAR EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN BIOMEDICAL SCIENCE AND TECHNOLOGY**

#### **BMET 455: SPECIAL TOPICS IN BIOMEDICAL SCIENCE & TECHNOLOGY**

**STREAMS:**

**TIME: 2 HOURS**

**DAY/DATE: TUESDAY 18/4/2023**

**2.30 P.M. – 4.30 P.M.**

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**INSTRUCTIONS:**

- Answer question **ONE (COMPULSORY)** and any other **TWO** questions
- Sketch diagrams may be used whenever they may help to illustrate your answer.
- Do not write on the question paper.
- This is a closed book exam. No reference materials are allowed in the examination room
- There will be No use of mobile phones or any other unauthorized materials.
- Write your answers legibly and use your time wisely.

#### **QUESTION ONE (30 MARKS)**

- a) Briefly discuss aging under the following headings:
- i) Stochastic theories. (5 marks)
  - ii) Nonstochastic theories. (5 marks)
- b) (i) Explain hormonal changes during pregnancy. (5 marks)
- (ii) Discuss factors that contribute to labor process. (5 marks)
- c) Thalassaemia is a blood disorder associated with formation of hemoglobin.
- (i) Discuss complications associated with alpha thalassaemia. (5 marks)
  - (ii) Explain how thalassaemia is managed. (5 marks)

#### **QUESTION TWO (20 MARKS)**

- a) Briefly discuss the regulation of calcitonin gene related peptide release by triptan. (10 marks)

- b) Explain the causes, symptoms and recent drugs used in management of cystic fibrosis. (10 marks)

QUESTION THREE (20 MARKS)

- a) Discuss the role of Poly (ADP-ribose) polymerase inhibitors and their role in cancer management . (10 marks)
- b) Discuss the causes of postpartum hemorrhage and mode of action of vacuum-induced uterine tamponade device. (10 marks)

QUESTION FOUR (20 MARKS)

- a) Explain the role of Klotho protein in aging and chronic kidney disease. (8 marks)
- b) Discuss how aging affect the following body systems.
- i) Musculoskeletal system. (3 marks)
  - ii) Respiratory function. (2 marks)
  - iii) Cardiovascular (2 marks)
  - iv) Endocrine and metabolism (2 marks)
  - v) Neurosensory. (3 marks)
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